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Bibliography

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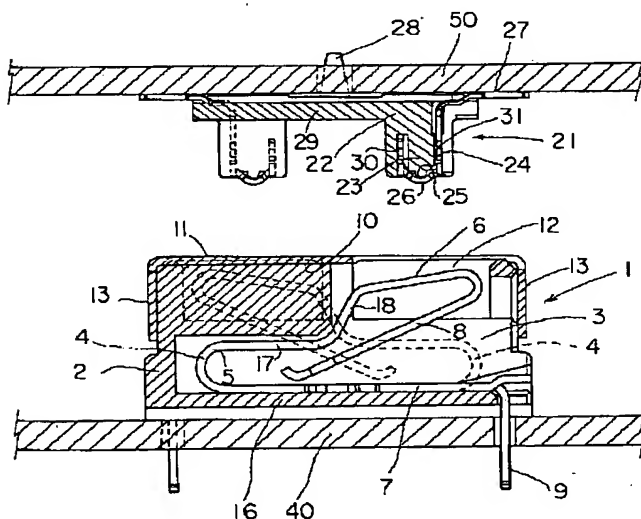
Summary

(57) [Abstract] (*****)

[Objects of the Invention] Attachment structure to housing of metal covering for preventing that electrification **** static electricity flows for a terminal to a connector server is simplified, and endurance is raised.

[Elements of the Invention] While being covered fixed by the top panel 10 except the opening 12 of the terminal wearing section 3 for the male terminal [in / the jack housing 2 / in the metal covering 11 which stands in a row to a ground bar] 24 passing at least Before the receptacle 4 which carries out elastic deformation within the terminal wearing section 3 of the jack housing 2 when the male terminal 24 of a male connector 21 is contacted contacts the male terminal 24 of a male connector 21, the contact section 6 is held in the terminal wearing section 3 of housing 2.

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CLAIMS

[Utility model registration claim]

[Claim 1] the terminal wearing circles of housing 2 — the jack 1 by which 3 is equipped with the receptacle 4 It consists of the male connector 21 by which the terminal wearing section 23 of housing 22 is equipped with the male terminal 24. The metal covering 11 which stands in a row to the; above-mentioned ground bar 15 in the static-free connector by which the metal covering 11 which stands in a row to the ground bar 15 for static frees is attached in the above-mentioned jack housing 2 While being covered fixed by the top panel 10 except the opening 12 of the terminal wearing section 3 for the male terminal 24 in the jack housing 2 passing at least The receptacle 4 which carries out elastic deformation within the terminal wearing section 3 of the jack housing 2 when the male terminal 24 of a male connector 21 is contacted The static-free connector characterized by holding the contact section 6 in the terminal wearing section 3 of housing 2 before contacting the male terminal 24 of a male connector 21.

[Claim 2] While the receptacle 4 in the above-mentioned jack 1 makes the bending section 5 inside, the contact section 6 is formed in the bottom at a base 7 and the bottom and the point of the base 7 further attached in a floor 16 is formed as the solder tail section 9 which bends right-angled The static-free connector given in claim 1 term characterized by presenting loose inclination to the point of the horizontal level 17 horizontally prolonged from the another side bending section 5, and ***** 18 of the point which starts suddenly, and the contact section 6 being formed, and for the point of this contact section 6 bending inside, being formed as a seat 8, and always locating the above-mentioned contact section 6 all over the terminal wearing slot 3.

[Claim 3] It has the terminal wearing section 23 formed in the size which projects the housing 22 of the above-mentioned male connector 21 from a floor 29, and enters into the opening 12 of a jack 1, and the contact section 26 is located in the top face 25 of this terminal wearing section 23. It is the static-free connector given in claim 1 term which carries out and is characterized by being constituted so that the above-mentioned terminal wearing section 23 may enter into the terminal

wearing section 3 of a jack 1 through the above-mentioned opening 12, when the male terminal 24 is attached and it fits in with a jack 1.

[Claim 4] The metal covering 11 of the above-mentioned jack 1 is a static-free connector given in claim 1 term characterized by having in one the left and the right lateral section 14 which also cover the left and right lateral of housing 2 while having in one the front section and the rear-face section 13 which also cover the front face and rear face of the jack housing 2, and forming the ground bar 15 in each point of the above-mentioned left and the right lateral section 14 in one.

[Claim 5] Into the housing 2 of the above-mentioned jack 1, it is equipped with two or more receptacles 4 in a predetermined pitch, and the contact section 6 of each receptacle 4 is alternately arranged also for **. The static-free connector given in claim 1 term to which a receptacle 4 is alternately arranged by housing 2, two or more male terminals 24 attached in the terminal wearing section 23 of a male connector 21 and there corresponding to this are also formed in housing 22, and ** is also characterized by arranging them alternately.

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

this design -- a static-free connector -- being involved -- the circuit of the printed circuit board of one side and another side -- a conductor -- it is related with the connector used for carrying out electrical connection of the between etc.

[0002]

[Description of the Prior Art]

Although the connector for substrate pair substrates for connecting both the printed circuit boards mentioned above as everyone knows is used abundantly, when a connector server treats a connector in these connectors, the cure for making it not

pass electrification **** static electricity for a terminal is usually taken by the server. Then, it is as follows when the example of this kind that took the conventional measures against a static free of connector is raised.

[0003]

That is, one conventional technology is shown in JP,3-35672,U. The receptacle which carries out elastic deformation when this consists of the jack by which the terminal applied part of housing is equipped with the receptacle, and the male connector by which the terminal applied part of housing is equipped with the male terminal, and metal covering for static frees is attached in the top panel of the above-mentioned jack housing possible [opening and closing] according to hinge structure and it connects with the male terminal of a male connector is making the contact section face out of the top panel of housing, before contacting the male terminal of a male connector. That is, it is in the state which opened metal covering which can be opened and closed before fitting, and it is locating the contact section between the aperture of this metal covering, and a housing top panel.

[0004]

[Problem(s) to be Solved by the Device]

According to the above-mentioned conventional technology, since it discharges to metal covering which has electrification **** static electricity to a connector server in front of the receptacle which has come out out of the housing top panel at the time of male-and-female fitting, the required cure against static electricity can be aimed at.

[0005]

However, it has the point which should be improved in the following point.

That is, since metal covering for an electrostatic discharge is attached in housing possible [opening and closing] by the hinge, a limitation is in simplification of the attachment structure of metal covering, and automation of attachment processing to housing of metal covering for the complicated structure becomes difficult.

Furthermore, since it is the structure which metal covering opens and closes and there is an element which metal covering will move to the degree of evulsion again, and moves to the degree of male-and-female fitting in this way, a problem is in endurance.

[0006]

Furthermore, since it had exposed out of the top panel of housing and the receptacle of a jack touched the contingency, contamination of the contact section of the receptacle concerned was invited, and it was tended before a male and female fitting to cause deformation, then it had a problem also constituting the poor cause of electrical installation.

[0007]

Therefore, the place made into the purpose of this design has the attachment structure of metal covering for an electrostatic discharge in offering the connector which it is easy and is so easy to carry out automation of attachment processing to

housing of metal covering, and there is intensity in addition and has high metal covering of endurance as compared with the conventional technology not to mention offering the connector for static frees. Furthermore, there is no possibility of touching a jack terminal at a contingency, and it is in offering the connector which does not cause contamination or deformation of the receptacle.

[0008]

[Means for Solving the Problem]

In order to attain the above-mentioned purpose, this design has the following technical means. When this is explained using the sign in the accompanying drawing corresponding to an example, namely, this design The jack 1 by which three in a terminal applied part of housing 2 is equipped with the receptacle 4. It consists of the male connector 21 by which the terminal applied part 23 of housing 22 is equipped with the male terminal 24. The metal covering 11 which stands in a row to the; above-mentioned ground bar 15 in the static-free connector by which the metal covering 11 which stands in a row to the ground bar 15 for static frees is attached in the above-mentioned jack housing 2 While being covered fixed by the top panel 10 except the opening 12 of the terminal applied part 3 for the male terminal 24 in the jack housing 2 passing at least The receptacle 4 which carries out elastic deformation within the terminal applied part 3 of the jack housing 2 when the male terminal 24 of a male connector 21 is contacted Before contacting the male terminal 24 of a male connector 21, it is the static-free connector characterized by holding the contact section 6 in the terminal applied part 3 of housing 2.

[0009]

[Function]

It is the above-mentioned composition, and when using a male connector 21 as a fitting connection plug at a jack 1, the terminal wearing section 23 of the male connector housing 22 is inserted in the opening 12 of a jack, and the contact section 26 of the male terminal 24 is made to contact the contact section 6 of the receptacle 4 of a jack 1. Under the present circumstances, electrification **** static electricity discharges to the metal covering 11, and the cure against static electricity is achieved by the connector server. Since it is covered with the place fixed by top panel 10 portion except opening 12, the above-mentioned metal covering 11 is simple for the attachment structure of this metal covering 11 to housing 2, automation of the attachment processing also becomes easy and, in addition, the intensity of metal covering and its endurance increase it in it. And since the receptacle 4 of a jack 1 is always in the terminal wearing section 3 and the contact section 6 has not come out out of the top panel, there is also no possibility that it may be touched by the contingency.

[0010]

[Example]

Next, according to an accompanying drawing, the example of this design is explained in full detail. Drawing 1 shows a male and the connectionless state of jacks 21 and 1,

and drawing 2 shows the fitting connection state. And drawing 7 shows a jack 1 from drawing 3 , and shows the male terminal 24 which drawing 15 uses for a male connector 21 and it from drawing 8 . Then, a jack 1 is explained first. This has housing 2 and the terminal wearing section 3 which leads outside through the opening 12 of a top panel is formed in this housing 2. And although this terminal wearing section 3 is equipped with the receptacle 4 The horizontal level 17 which this receptacle 4 makes the bending ***** bending section 5 the shape of U character in inside, and is horizontally prolonged in the upper one, ***** 18 the point starts the ***** a little suddenly, and the contact section 6 which presents loose inclination to the point of the ***** 18, and is prepared in it, It has the seat 8 bent inside the point of the contact section 6, and has the base 7 attached in the direction of the another side bottom at the floor 16 of housing 2, and the solder tail section 9 bent right-angled in the point of the base 7. An important thing is that all the receptacles 4 are located in the terminal wearing section 3 of housing 2 also in the state where external force has not joined before [4] this contact (i.e., a receptacle) here, although a receptacle 4 carries out elastic deformation within the terminal wearing section 3 by contacting the contact section 26 of the male terminal 24 of a male connector 21 mentioned later. That is, the contact section 6 has not faced out of the top panel 10 of housing 2. Now, all other portions are covered with the metal covering 11 by the top panel 10 of housing 2 except for the opening 12 for the male terminal 24 passing. As for this metal covering 11, ** is also being fixed to the top panel 10. In addition, the front face and the rear-face section 13 of the metal covering 11 are covered by the front face and rear face of housing 2 fixed, and the left lateral and right lateral 14 of the metal covering 11 are covered by the left and right laterals of housing 2 fixed. And the ground bar 15 prolonged at a level with the left-and-right-laterals section 14 stands in a row in one.

[0011]

Then, a male connector 21 side is explained below according to drawing 8 . The flat floor 29 is formed in the housing 22 of this male connector 21, and the terminal applied part 23 is projected and formed in this floor 29. And this terminal applied part 23 is set as the size which can frequent the opening 12 of a jack 1 mentioned above. Furthermore, a sign 24 shows a male terminal, and this male terminal 24 is attached all over the slot of the terminal applied part 23, as the contact section 26 is located on the top face 25 of the terminal applied part 23.

Namely, although make the contact section 26 into inside and the front bends below, form the front attachment section 30, the back also bends below, the male terminal 24 forms the back attachment section 31, and the point of this back attachment section 31 is bent right-angled and forms the solder tail 27 It is attached in the terminal applied part 23, where the above-mentioned front attachment section 30 was embedded and fixed all over the front attachment slot 32 of the terminal applied part 23 and the back attachment section 31 is fixed all over the back attachment slot 33. Furthermore, the piece 28 of attachment is formed in the inferior surface of

tongue of the floor 29 of housing 22 in one at right-and-left both sides.

[0012]

Then, how to use this connector according to drawing 1 and drawing 2 is explained. In these drawings, the jack 1 is mounted in one printed circuit board 40. And the male connector 21 is mounted in the printed circuit board 50 of another side.

[0013]

As shown in drawing showing the mutual connectionless state of drawing 1, the receptacle 4 of the female connector 1 is altogether located in the terminal applied part 3, and has not projected the contact section 6 of a receptacle 4 to a way outside the top panel 10 of housing 2, and the metal covering 11. Therefore, unexpected external force is applied to the contact section 6 of a receptacle 4, or it does not touch, and contamination of a receptacle 4 and deformation are prevented.

[0014]

In the process which shifts to the state of drawing 2 from the state of this drawing 1, electrification **** static electricity discharges to the metal covering 11, and an electrostatic cure is achieved by the connector server. That is, it does not flow to a male and a receptacle. And as shown in drawing 2, the contact section 26 of the male terminal 24 of a male connector contacts the receptacle 6 of a jack 1, and electrical installation is planned. Under the present circumstances, for a receptacle 4, it deforms in a from cartridge in the place of the bending section 5, and the nose of cam of the seat 8 is **** to a floor 16. That is, by elasticity, the contact section 6 is energized to the contact section 26 side of the male terminal 24, and moderate contact pressure is maintained. ** also serves as an abbreviation horizontal and the contact section 6 of the male terminal 4 contacts the contact section 26 of the male terminal 24 at each part homogeneity. And in the connector of this application, at the time of fitting, the terminal applied part 23 of a male connector 21 frequents the opening 12 of the housing 2 of a jack 1, and carries out elastic deformation of the receptacle 4 of a jack 1 within the terminal applied part 3 so that this drawing 2 may show.

[0015]

Although it explained paying attention to the male-and-female connector of a couple in order to give explanation intelligible in the above in a place, the housing 2 of a jack 1 is equipped with two or more receptacles 4 lining up side-by-side in the predetermined pitch. That is, the terminal wearing slot 3 is formed in housing 2 in the predetermined pitch lining up side-by-side. In addition, two or more terminals 4 are arranged by housing 2 as that the each section 6 of contact serves as a staggered arrangement as a whole. Therefore, the terminal wearing slot 3 of a horizontal next door is formed in one terminal wearing slot 3 and it at housing so that it may become with a staggered arrangement. The state of drawing 6 and drawing 7 which showed respectively six to 6 line of drawing 4 and seven to 7 line shows it. It is arranged so that the terminal wearing section 23 by which the another side male connector 21 is also projected and formed in the floor 29 may serve as a

staggered arrangement as a whole, and the male terminal 24 has become a staggered arrangement as a whole.

[0016]

[Effect]

Since metal covering for it is covered by jack housing fixed not to mention being able to discharge electrification **** static electricity through metal covering to a connector server, and electrostatic measures being taken according to this design as explained in full detail above, attachment of metal covering to housing is also easy, it is easy to carry out automation of metal covering attachment processing, and the intensity of metal covering and a jack especially has increase and the advantage which is rich to endurance. In addition, the receptacle of a jack has the all in the terminal wearing circles in jack housing, and it does not have fear of contamination and deformation, without adding unexpected external force, since the contact section has not exposed before fitting out of the top panel of housing.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] A male, drawing showing the state before fitting connection of a jack.

[Drawing 2] Drawing showing a male and the fitting connection state of a jack.

[Drawing 3] The plan of a jack.

[Drawing 4] Front view of a jack

[Drawing 5] The right lateral view of a jack.

[Drawing 6] The cross section which meets six to 6 line of drawing 4 .

[Drawing 7] The cross section which meets seven to 7 line of drawing 4 .

[Drawing 8] The plan of a male connector.

[Drawing 9] Front view of a male connector.

[Drawing 10] The right lateral view of a male connector

[Drawing 11] The cross section which meets 11 to 11 line of drawing 9 .

[Drawing 12] Front view of a male terminal.

[Drawing 13] The plan of a male terminal.

[Drawing 14] The left lateral view of a male terminal.

[Drawing 15] The right lateral view of a male terminal.

[Description of Notations]

1 Jack

2 Housing

3 Terminal Applied Part

4 Receptacle

5 Bending Section

6 Contact Section

7 Base

8 Seat

9 Solder Tail

10 Top Panel

11 Metal Covering

12 Opening

13 Metal Covering Front Stirrup is Rear-Face Section.

14 Metal Covering Left-and-Right-Laterals Section

15 Ground Bar

16 Housing Floor

17 Horizontal Level

18 *****

21 Male Connector

22 Housing

23 Terminal Applied Part

24 Male Terminal

25 Top Face

26 Contact Section

27 Solder Tail

28 Piece of **

29 Floor

40 One Printed Circuit Board

50 Printed Circuit Board of Another Side

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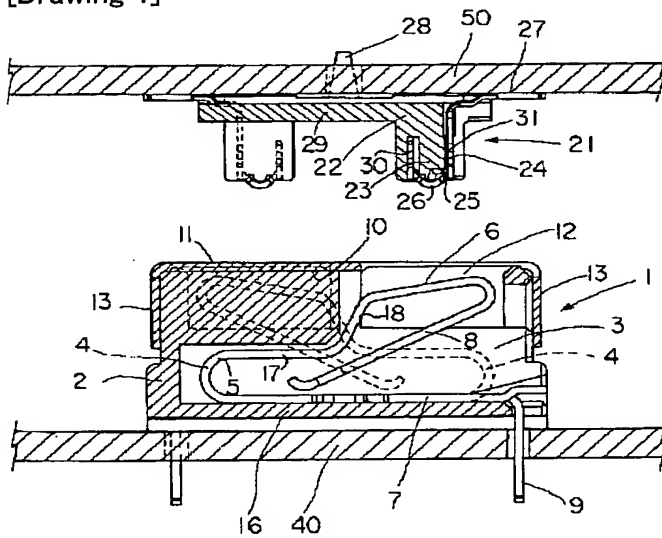
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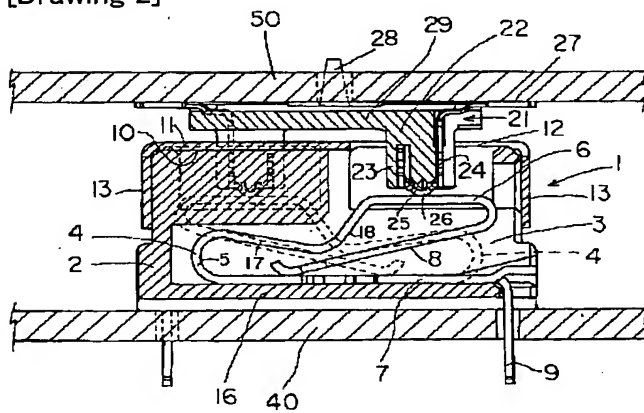
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DRAWINGS

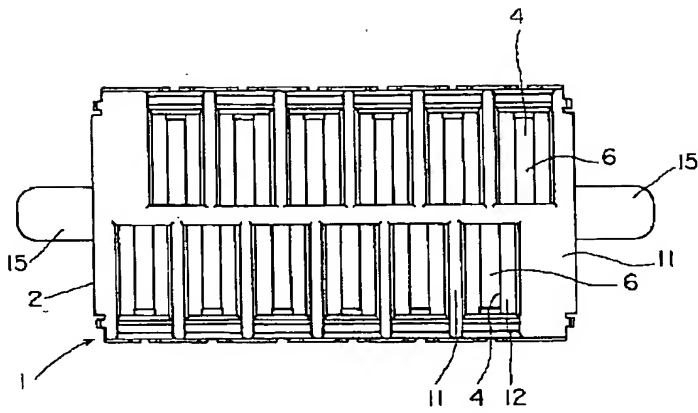
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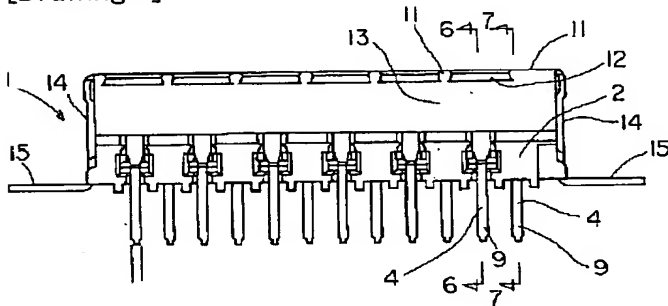
[Drawing 2]



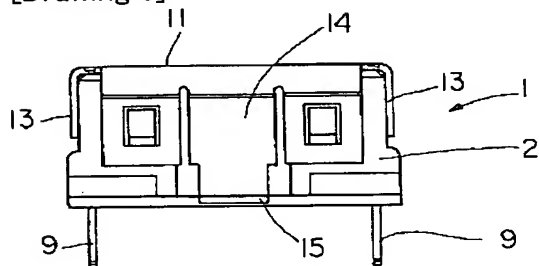
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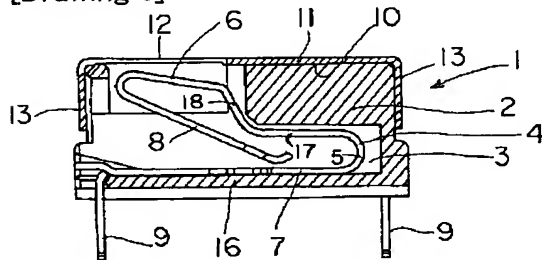
[Drawing 4]



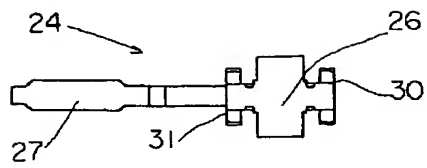
[Drawing 5]



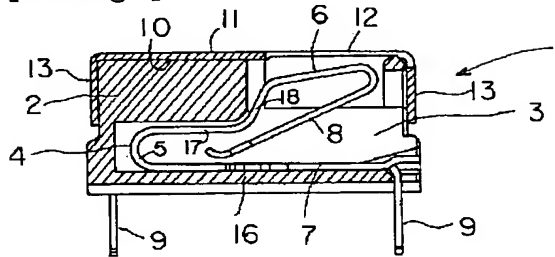
[Drawing 6]



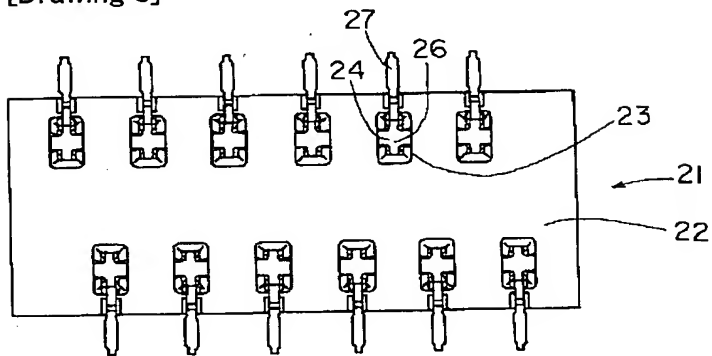
[Drawing 13]



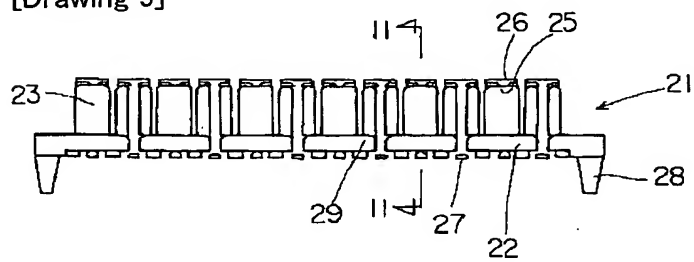
[Drawing 7]



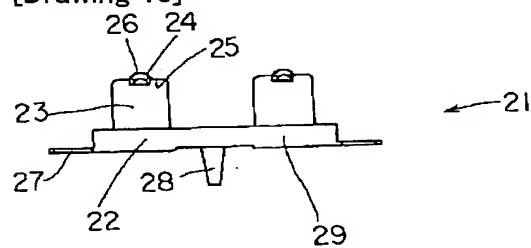
[Drawing 8]



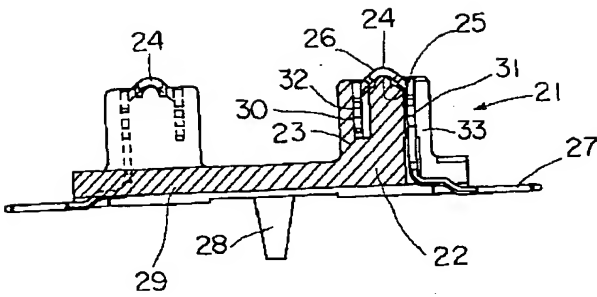
[Drawing 9]



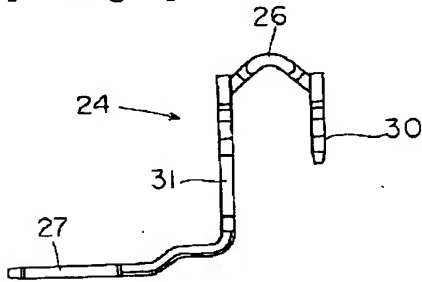
[Drawing 10]



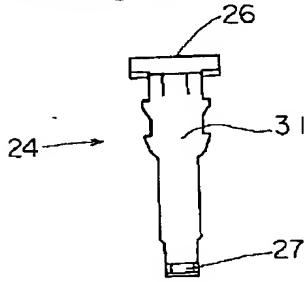
[Drawing 11]



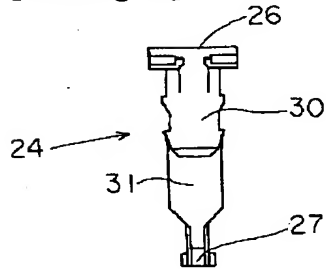
[Drawing 12]



[Drawing 14]



[Drawing 15]



[Translation done.]

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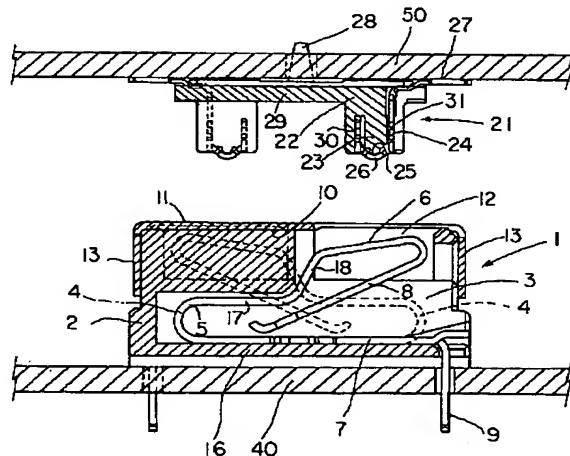
(74)代理人 弁理士 池田 宏

(54)【考案の名称】 静電気防止コネクタ

(57)【要約】 (修正有)

【目的】コネクタ极者に帯電せる静電気が端子に流れる事を防止する為の金属カバーのハウジングへの取付構造を簡単にし、且つ耐久性を高める。

【構成】アースバーに連なる金属カバー11が、少なくとも雌コネクタハウジング2に於ける雄端子24が通る為の端子装着部3の開口12を除いた天面10に固定的に被覆されていると共に、雄コネクタ21の雄端子24と接触した時に雌コネクタハウジング2の端子装着部3内で弾性変形する雌端子4は、雄コネクタ21の雄端子24と接触する前も、そのコンタクト部6がハウジング2の端子装着部3内に収容されている。



1

【実用新案登録請求の範囲】

【請求項1】 ハウジング2の端子装着部内3に雌端子4が装着されている雌コネクタ1と、ハウジング22の端子装着部23に雄端子24が装着されている雄コネクタ21より成り、上記雌コネクタハウジング2に静電気防止用のアースバー15に連なる金属カバー11が取付けられている静電気防止コネクタに於いて；上記アースバー15に連なる金属カバー11が、少なくとも雌コネクタハウジング2に於ける雄端子24が通る為の端子装着部3の開口12を除いた天面10に固定的に被覆され

ていると共に、雄コネクタ21の雄端子24と接触した時に雌コネクタハウジング2の端子装着部3内で弾性変形する雌端子4は、雄コネクタ21の雄端子24と接触する前も、そのコンタクト部6がハウジング2の端子装着部3内に収容されている事を特徴とする静電気防止コネクタ。

【請求項2】 上記雌コネクタ1に於ける雌端子4は、折曲部5を中にして下側に基部7と、上側にコンタクト部6が形成され、更に床部16に取付けられる基部7の先は直角に折曲がるソルダーテール部9として形成され

ていると共に、他方折曲部5から水平に延びる水平部17と、その先の急に立上がる立上部18の先に緩やかな勾配を呈してコンタクト部6が形成され、このコンタクト部6の先が内側に折曲がり座部8として形成されていて、上記コンタクト部6が常時端子装着溝3中に位置していることを特徴とする請求項1項記載の静電気防止コネクタ。

【請求項3】 上記雄コネクタ21のハウジング22は、床部29から突出し、且つ雌コネクタ1の開口12中に入る大きさに形成された端子装着部23を有し、この端子装着部23の頂面25に、コンタクト部26が位置するようにして雄端子24が取付けられ、雌コネクタ1と嵌合する時は上記端子装着部23が上記開口12を

通って雌コネクタ1の端子装着部3中に入るように構成されている事を特徴とする請求項1項記載の静電気防止コネクタ。

【請求項4】 上記雌コネクタ1の金属カバー11は、雌コネクタハウジング2の前面及び後面をも被覆する前面部及び後面部13を一体的に備えると共にハウジング2の左及び右側面をも被覆する左及び右側面部14を一

体的に備え、上記左及び右側面部14の各々の先にアースバー15が一体的に形成されている事を特徴とする請求項1項記載の静電気防止コネクタ。

【請求項5】 上記雌コネクタ1のハウジング2中には複数の雌端子4が所定のピッチで装着され、而も各雌端子4のコンタクト部6が千鳥状に配列されるように雌端子4がハウジング2に千鳥状に配列され、これに対応して雄コネクタ21の端子装着部23及びそこに取付けられる雄端子24もハウジング22に複数設けられ、而も

2

それらが千鳥状に配列されている事を特徴とする請求項1項記載の静電気防止コネクタ。

【図面の簡単な説明】

【図1】 雄、雌コネクタの嵌合接続前の状態を示す図。

【図2】 雄、雌コネクタの嵌合接続状態を示す図。

【図3】 雌コネクタの平面図。

【図4】 雌コネクタの正面図

【図5】 雌コネクタの右側面図。

【図6】 図4の6-6線に沿う断面図。

【図7】 図4の7-7線に沿う断面図。

【図8】 雄コネクタの平面図。

【図9】 雄コネクタの正面図。

【図10】 雄コネクタの右側面図

【図11】 図9の11-11線に沿う断面図。

【図12】 雄端子の正面図。

【図13】 雄端子の平面図。

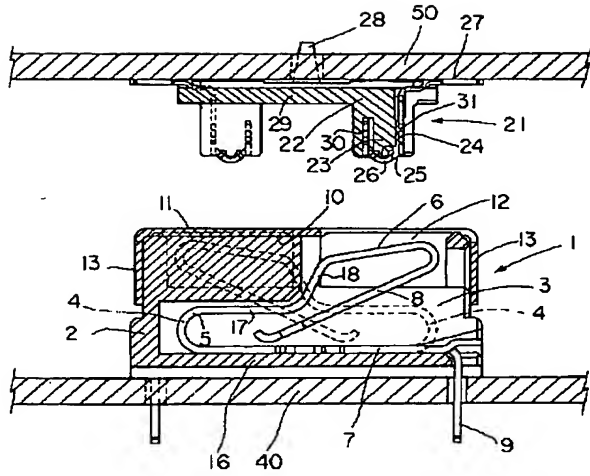
【図14】 雄端子の左側面図。

【図15】 雄端子の右側面図。

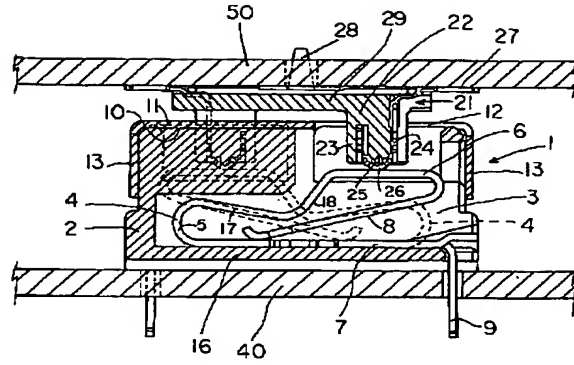
【符号の説明】

1	雌コネクタ
2	ハウジング
3	端子装着部
4	雌端子
5	折曲部
6	コンタクト部
7	基部
8	座部
9	ソルダーテール
10	天面
11	金属カバー
12	開口
13	金属カバー前又は後面部
14	金属カバー左右側面部
15	アースバー
16	ハウジング床部
17	水平部
18	立上部
21	雄コネクタ
22	ハウジング
23	端子装着部
24	雄端子
25	頂面
26	コンタクト部
27	ソルダーテール
28	止片
29	床部
40	一方のプリント回路基板
50	他方のプリント回路基板

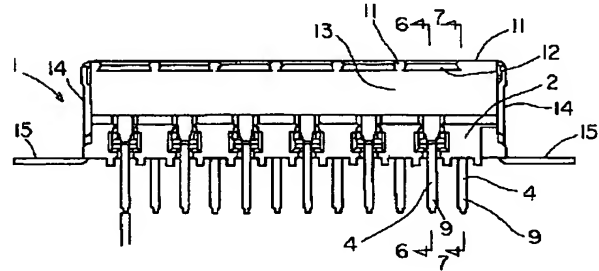
【図1】



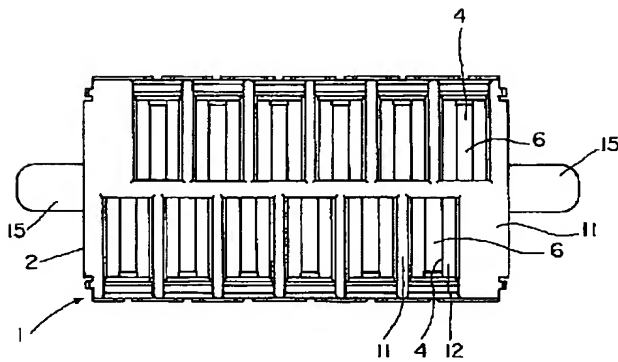
【図2】



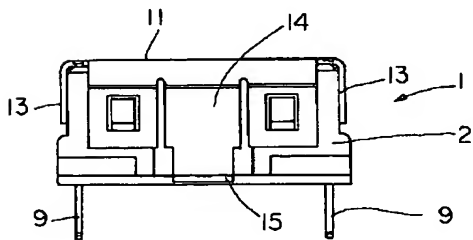
【図4】



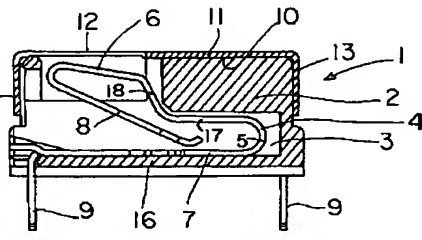
【図3】



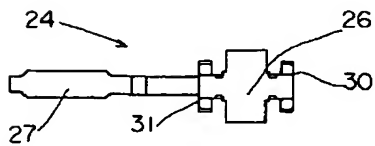
【図5】



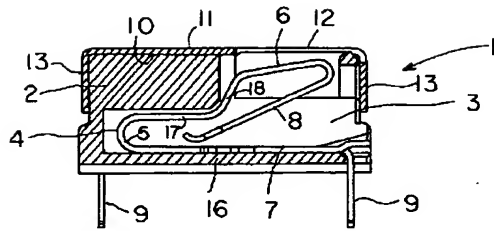
【図6】



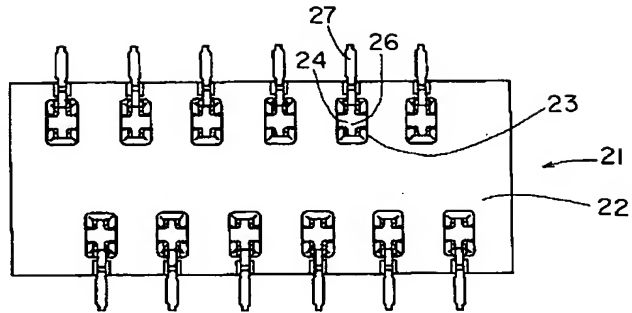
【図13】



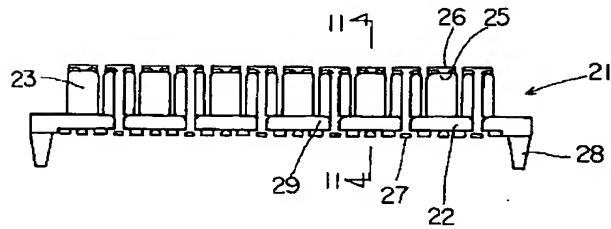
【図7】



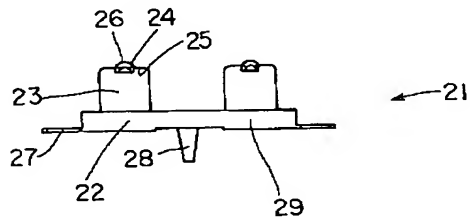
【図8】



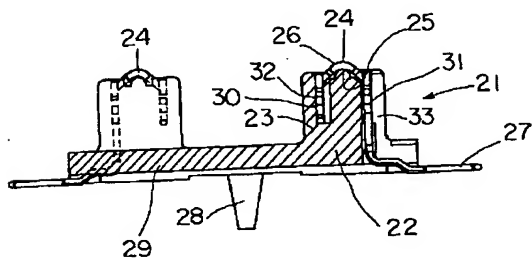
【図9】



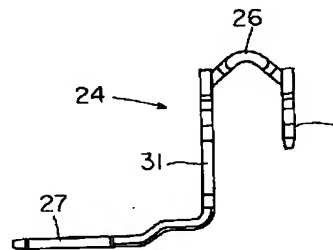
【図10】



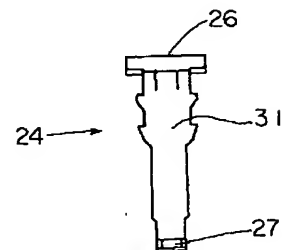
【図11】



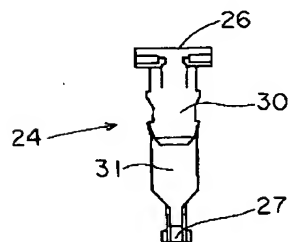
【図12】



【図14】



【図15】



【考案の詳細な説明】**【0001】****【産業上の利用分野】**

本考案は静電気防止コネクタに係わり、一方と他方のプリント回路基板の回路導体間を電気接続する等に利用されるコネクタに関する。

【0002】**【従来技術】**

周知の通り上述したプリント回路基板相互を接続する為の基板対基板用コネクタが多用されているが、通常これらのコネクタに於いては、コネクタ扱者がコネクタを扱う時に扱者に帯電せる静電気を端子に流さないようにする為の対策が採られている。そこで従来静電気防止対策を施したこの種のコネクタの例を上げると次の通りである。

【0003】

即ち一つの従来技術は実開平3-35672号公報に示されている。これは、ハウジングの端子装着部に雌端子が装着されている雌コネクタと、ハウジングの端子装着部に雄端子が装着されている雄コネクタより成り、上記雌コネクタハウジングの天面に静電気防止用の金属カバーがヒンジ構造によって開閉可能に取付けられ、且つ雄コネクタの雄端子と接続した時に弾性変形する雌端子は、雄コネクタの雄端子と接触する前は、そのコンタクト部をハウジングの天面の外に臨ませているものである。即ち嵌合前は、開閉可能な金属カバーを開けた状態で、この金属カバーの窓とハウジング天面の間にコンタクト部を位置させている。

【0004】**【考案が解決しようとする課題】**

上記従来技術によれば、コネクタ扱者に帯電せる静電気が、雄雌嵌合時にハウジング天面の外に出ている雌端子の前にある金属カバーに放電される為必要な静電気対策が図れる。

【0005】

然しながら次の点に於いて改善すべき点を有している。
即ち、静電気放電の為の金属カバーがヒンジによって開閉可能にハウジングに取

付けられているので、金属カバーの取付構造の簡単化に限界があり、且つその複雑な構造の為に金属カバーのハウジングへの取付加工の自動化が難しくなる。更に金属カバーが開閉する構造であるから雄雌嵌合の度に、又抜去の度に金属カバーが動くこととなり、このように動く要素があるので耐久性に問題がある。

【0006】

更に雌コネクタの雌端子は、雄、雌嵌合前はハウジングの天面の外に露出している為に、不測に触れることもあり、当該雌端子のコンタクト部の汚染を招いたり、変形を招き易い、すると電氣的接続の不良の原因にもなる問題があった。

【0007】

従って本考案の目的とする所は、静電気防止用のコネクタを提供するのは勿論のこと、静電気放電の為に金属カバーの取付構造が従来技術に比して簡単であり、それ故に金属カバーのハウジングへの取付加工の自動化がし易く、加えて強度があり耐久性の高い金属カバーを有するコネクタを提供するにある。更に雌コネクタ端子に不測に触れる恐れがなく、その雌端子の汚染や変形を来すことのないコネクタを提供するにある。

【0008】

【課題を解決する為の手段】

上記目的を達成する為に本考案は次の技術的手段を有する。即ち、実施例に対応する添付図面中の符号を用いてこれを説明すると本考案は、ハウジング2の端子装着部内3に雌端子4が装着されている雌コネクタ1と、ハウジング22の端子装着部23に雄端子24が装着されている雄コネクタ21より成り、上記雌コネクタハウジング2に静電気防止用のアースバー15に連なる金属カバー11が取付けられている静電気防止コネクタに於いて；上記アースバー15に連なる金属カバー11が、少なくとも雌コネクタハウジング2に於ける雄端子24が通る為の端子装着部3の開口12を除いた天面10に固定的に被覆されていると共に、雄コネクタ21の雄端子24と接触した時に雌コネクタハウジング2の端子装着部3内で弾性変形する雌端子4は、雄コネクタ21の雄端子24と接触する前も、そのコンタクト部6がハウジング2の端子装着部3内に収容されている事を特徴とする静電気防止コネクタである。

【0009】

【作用】

上記構成であって、雄コネクタ21を雌コネクタ1に嵌合接続せんとする時、雄コネクタハウジング22の端子装着部23を雌コネクタの開口部12に挿入し、雄端子24のコンタクト部26を雌コネクタ1の雌端子4のコンタクト部6に接触せしめる。この際、コネクタ扱者に帯電せる静電気は、金属カバー11に放電され、静電気対策が図られる。所で、上記金属カバー11は開口12を除いた天面10部分に固定的に被覆されているから、ハウジング2へのこの金属カバー11の取付構造が簡単であり、その取付加工の自動化も容易となり、加えて金属カバーの強度、耐久性が増す。そして雌コネクタ1の雌端子4は常時端子装着部3内に在って、そのコンタクト部6は天面の外に出ていないので、不測に触れられる恐れもない。

【0010】

【実施例】

次に添付図面に従い本考案の実施例を詳述する。図1は雄、雌コネクタ21、1の非接続状態を示し、図2は嵌合接続状態を示している。そして図3から図7までは雌コネクタ1を示し、図8から図15までは雄コネクタ21及びそれに用いる雄端子24を示している。そこで先ず雌コネクタ1を説明する。これはハウジング2を有し、このハウジング2には、天面の開口部12を通して外部に通じている端子装着部3が形成されている。そしてこの端子装着部3に雌端子4が装着されているが、この雌端子4はU字状に折曲っている折曲部5を中にして上側の方に、水平に延びる水平部17と、その先のやや急に立上がる立上部18と、その立上部18の先に緩やかな勾配を呈して設けられているコンタクト部6と、コンタクト部6の先の内側に折曲げられた座部8を有し、他方下側の方にハウジング2の床部16に取付けられる基部7と、その基部7の先に於いて直角に折曲げられている溶ダテール部9を有している。ここで重要なことは、後述する雄コネクタ21の雄端子24のコンタクト部26と接触することによって雌端子4が端子装着部3内で弾性変形するが、この接触前、即ち雌端子4に外力が加わっていない状態でも雌端子4の全てがハウジング2の端子装着部3内に位置して

いることである。即ちコンタクト部6がハウジング2の天面10の外に臨んでいないものである。さて、ハウジング2の天面10には、雄端子24が通る為の開口12を除いて他の部分全てが金属カバー11によって被覆されている。而もこの金属カバー11は天面10に固定されているものである。加えて、ハウジング2の前面及び後面にも金属カバー11の前面及び後面部13が固定的に被覆され、且つハウジング2の左右側面にも金属カバー11の左側面及び右側面14が固定的に被覆されている。且つ左右側面部14には水平に延びるアースバー15が一体的に連なっている。

【0011】

続いて図8以下に従い雄コネクタ21側を説明する。この雄コネクタ21のハウジング22には平たい床部29が形成され、この床部29に端子装着部23が突出して形成されている。そしてこの端子装着部23は前述した雌コネクタ1の開口12に出入できる大きさに設定されている。更に符号24は雄端子を示し、この雄端子24は、そのコンタクト部26が端子装着部23の頂面25上に位置するようにして端子装着部23の溝中に取り付けられている。

即ち雄端子24はコンタクト部26を中にしてその前方が下方へ折曲がり前方取付部30を形成し、その後方も下方へ折曲がり後方取付部31を形成し、この後方取付部31の先が直角に曲げられてソルダータール27を形成しているが、上記の前方取付部30が端子装着部23の前方取付溝32中に埋込み固定され、後方取付部31が後方取付溝33中に固定された状態で端子装着部23に取り付けられているものである。更にハウジング22の床部29の下面には左右両サイドに取付片28が一体的に設けられている。

【0012】

続いて図1、図2に従いこのコネクタの用い方を説明する。これらの図に於いて雌コネクタ1は一方のプリント回路基板40に実装されている。そして雄コネクタ21は他方のプリント回路基板50に実装されている。

【0013】

図1の互いの非接続状態を示す図から判るように雌コネクタ1の雌端子4は端子装着部3内に全て位置し、雌端子4のコンタクト部6はハウジング2の天面1

0及び金属カバー11の外方へ突出していない。故に不測の外力が雌端子4のコンタクト部6にかかったり、触れたりすることがなく、雌端子4の汚染、変形が防止されている。

【0014】

この図1の状態から図2の状態へ移行する過程で、コネクタ扱者に帯電せる静電気は、金属カバー11に放電され静電対策が図られる。即ち雄、雌端子に流れることがない。そして図2に示すように、雄コネクタの雄端子24のコンタクト部26が雌コネクタ1の雌端子6に接触し電氣的接続が図られる。この際、雌端子4は折曲部5の所で弾発的に変形し、その座部8の先端が床部16に座す。即ち弾力により、コンタクト部6を雄端子24のコンタクト部26側へ付勢し、適度な接触圧を保つ。而も雄端子4のコンタクト部6は略水平となり、雄端子24のコンタクト部26に各部均一に接触する。そしてこの図2から判るように、本願のコネクタに於いては雄コネクタ21の端子装着部23が嵌合時、雌コネクタ1のハウジング2の開口12に出入し、且つ雌コネクタ1の雌端子4は端子装着部3内で弾性変形するものである。

【0015】

所で上記に於いては説明を判り易くする為に一对の雄雌コネクタに着目して説明したが、雌コネクタ1のハウジング2には複数の雌端子4が所定のピッチで横並びに装着されている。即ち端子装着溝3がハウジング2に横並びに所定のピッチで形成されている。加えて複数の端子4は、その各々のコンタクト部6が全体として千鳥配列となるようにしてハウジング2に配列されているものである。従って一つの端子装着溝3と、それに横隣りの端子装着溝3は千鳥配列となるようにハウジングに形成されている。図4の6-6線と7-7線を各々示した図6と図7の状態がそれを示している。他方雄コネクタ21の方も、床部29に突出形成されている端子装着部23が全体として千鳥配列となるように配列され、雄端子24が全体として千鳥配列になっているものである。

【0016】

【効果】

以上詳述した如くこの考案によるとコネクタ扱者に帯電せる静電気を金属カバ

ーを通して放電でき静電対策が施されるのは勿論のこと、この為の金属カバーが雌コネクタハウジングに固定的に被覆されているから、ハウジングへの金属カバーの取付も容易であって、金属カバー取付加工の自動化もし易く、とりわけ金属カバー及び雌コネクタの強度が増し、耐久性に富む利点を有する。加えて雌コネクタの雌端子は、その全部が雌コネクタハウジング内の端子装着部内に在って、嵌合前もコンタクト部がハウジングの天面の外に露出していないから不測の外力が加わることもなく、汚染、変形の恐れがないものである。